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ROTUNDA the bulletin of The Royal Ontario Museum

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The Cover:
Detail of shield from Swiss Heraldic stained glass panel, dated about 1500 in the ROM collection. Complete view shown on page 27, Fig. 5 and discussed in the article, "Seven Stained Glass Panels" by H. Hickl-Szabo. Photographed by Leighton Warren.

Colour photographs of objects from the Nasli and Alice Heeramaneck Collection courtesy of the Museum of Fine Arts, Boston.

Another step

P. C. Swann, Director

This is the first issue of the Royal Ontario Museum's new quarterly Bulletin, ROTUNDA. The name refers to the Museum's main reception area that serves as the entrance to the galleries of the two major interests of the ROM: Art and Archaeology and the Natural Sciences.

ROTUNDA will publish articles that reflect the diversity of the Museum's twenty-one departments of arts and sciences; their collections, researches, exhibitions and other activities. In an institution of this size and complexity, much is happening both seen and unseen, which we feel will interest Members and the public and enrich their appreciation of Canada's largest Museum. For the ROM is not just a storehouse of the past but a source of information and inspiration for the community. Its collections can illuminate the past, its scholarship and research can influence the present and the future.

The launching of ROTUNDA was made possible by a grant from the Laidlaw Foundation which, as so often in the past, has supported the Museum with generous and timely assistance.

ROTUNDA will be distributed free to Members of the Royal Ontario Museum and will be offered by subscription to others interested in the Museum.

ROTUNDA appears as the Museum faces a period of change, renewal and expansion which it hopes will claim the interest and support of the many people who regard it with pride and affection.

Preparations are being made for the separation of the ROM from the University of Toronto. The Museum will be expected to stand and develop independently. But its health and vitality depend upon broadly based public support as much as Government recognition of the large and lasting contribution it has made over the last half-century to the cultural life of the city, province and country.

Established Torontonians have grown up in the friendly atmosphere of the Museum; newcomers to the city find in it welcome links with their past. Sunday afternoons at the ROM are truly international gatherings in the widest sense of the word. Soon we shall enjoy nearly one million visitors per year. The value of an outstanding Museum to a cosmopolitan, expanding community is inestimable. Equally, ROTUNDA will reflect the international commitments, the world-wide interests of the Museum.

That the ROM is reaching the public is indicated by our Membership which has climbed in the last year from about one thousand to more than fifteen hundred. We need at least two thousand Members to put ROTUNDA on a firm basis. With the help of our present active membership, such a modest increase should not be difficult. We look to you for support.

As a final word, may we urge readers to preserve their copies of ROTUNDA. Over the years early issues will become scarce and a complete set will have many values.

Fig. 1
Two addorsed tree dryads (Sālabhañjikā)
Sāñchi, Stupa 1, c. A.D. 10–25
Argillaceous sandstone. 25 × 16 in.
The Arts of India and Nepal: The Nasli and Alice Heeramaneck Collection *Catalogue No. 1*
Courtesy, Museum of Fine Arts, Boston

the arts of India and Nepal

highlights from the Heeramaneck and ROM collections

by Henry Trubner

Opportunities in North America for seeing major collections of the arts of greater India are largely limited to major museums in the United States. In Canada, only the Royal Ontario Museum can boast of a small but excellent collection of Indian art. The ROM is particularly strong in the art of the Gandhāra school of northwest India and certain aspects of later Hindu sculpture.

It is therefore all the more gratifying that the remarkably fine and important collection of Indian and Nepalese art, belonging to Nasli and Alice Heeramaneck of New York, will be displayed at the Royal Ontario Museum from January 23 to March 10, 1968. The collection, already shown at the Museum of Fine Arts, Boston, the Los Angeles County Museum of Art, the Detroit Institute of Arts and the Virginia Museum of Fine Arts, Richmond, will terminate its tour at the Royal Ontario Museum.

The collection of Indian and Nepalese art displayed at the ROM represents a selection of the Heeramanecks' infinitely larger holdings of Asiatic art in New York. The high standard of quality which distinguishes every work of art owned by the Heeramanecks is primarily the result of Nasli Heeramaneck's keen eye, sound scholarship and relentless energy during many years of collecting.

The exhibition presents superb examples of the entire range of Indian stone sculpture, of metal images from Kashmir, the Pāla empire of Bihar and Bengal in northeast India and Nepal, as well as excellent examples of Indian and Nepalese painting and the minor arts. Throughout the entire exhibition the visitor will find supreme quality as the primary guideline forming this collection.

The earliest remains of Indian art take us back more than four thousand years, to the Indus Valley civilization which flourished in northwest India, present-day Pakistan, from about 2300–1700 B.C. Mohenjo-daro on the Indus River and Harappa in the Punjab were the principal cities of the Indus Valley culture, which have yielded important

examples of Indian sculpture and other artifacts and offer abundant proof of the existence of a very advanced and rich civilization. The excavations of Mohenjo-daro have revealed a very advanced state of city planning, with the principal streets running from north to south, to take advantage of the prevailing winds. The nature of many of the finds has led to the common belief that there must have been contacts between the peoples of the Indus Valley culture and the cities of ancient Mesopotamia. Commercial and cultural relations were undoubtedly maintained by sea and by the overland route passing through Baluchistan.

Characteristic of many of the finds from the sites of Mohenjo-daro and nearby Chanhu-daro is the small clay bull, dating from the second millennium B.C. (Fig. 2). The representation is stylized and the animal is shown with a schematized hump and a halter around his neck, decorated with a rosette in the centre. The eyes, like other statuettes of this type, were added separately in the form of small clay pellets with pierced holes to indicate the irises.

The Dravidian or Indus Valley civilization lasted for about 600 years. It was succeeded by the inferior Jhukar culture which extended until the time of the Aryan invasions in 1500 B.C. The abandonment of the Indus Valley cities was probably caused by a combination of factors. Perhaps the invasions of the Aryans, coming from the Iranian plateau or the area of the Caspian Sea were partially responsible. A more likely reason was the gradual desiccation of the Indus Valley, resulting from either a shifting of the monsoon winds or a change in the course of the Indus, or both. Whatever the reasons for the end of the Indus Valley culture, the Dravidians were forced to move south into the Deccan leaving the Indus cities behind.

The period between the end of the Indus Valley civilization and the accession of the Maurya rulers includes the Vedic period (c. 1500–800 B.C.) and the Śaiśunāga-Nanda period (642–322 B.C.), named after the first historical dynasty of the pre-Maurya age. The Aryans, who came as conquerors and imposed their own philosophical and social ideals on India and introduced the caste system, were nevertheless absorbed into the mainstream of Indian civilization and culture. As a result, Indian culture became a mixture of Dravidian and Aryan elements. Very often in the history of Indian art aspects derived from both sources will appear side by side.

There are no artistic remains from the pre-Maurya period. Our knowledge of the production of architecture and sculpture is largely conjectural based on numerous references to actual techniques and works of architecture and sculpture in the Vedic hymns, which were composed by the Aryan invaders sometime between 1500 and 800 B.C.

This period between the disappearance of the Indus civilization and the founding of the Maurya empire is extremely important for the emergence of the great religious systems, Hinduism and Buddhism, which were to exercise a profound influence not only upon India but upon all of Asia. Modern Hinduism derived from a combination of Dravidian and Aryan elements which developed separately in

Fig. 2
Bull
Probably Indus Valley culture, 2nd millennium B.C.
Orange-pink baked clay. 4⅝ × 6⅝ in.
The Arts of India and Nepal: The Nasli and Alice Heeramaneck Collection *Catalogue No. 7*
Courtesy, Museum of Fine Arts, Boston

the course of the first millennium B.C. These elements emerged as the religious system known as Hinduism early in the Christian era, when the Vedic gods were superseded by the worship of the Hindu Trinity, represented by Brahma, Vishnu and Śiva. Of even greater importance for the later history of all Asiatic civilization was the rise of Buddhism. Originally based on the teaching and the events in the life of the historical Buddha Śākyamuni (563–483 B.C.), also known by his personal name Siddhārta, or by his surname Gautama, Buddhism ultimately developed into a vastly complex religious system which spread from India to the Far East and to South-East Asia.

Buddhism gained its first official foothold in India with the accession to power in the third century B.C. of the emperor Aśoka, illustrious ruler of the Maurya dynasty and one of the most renowned patrons of Buddhism in Asia (reigned c. 272–232 B.C.). Aśoka was the grandson of Chandragupta Maurya, a camp follower in the armies of Alexander the Great before he asserted his independence, subdued his rivals and founded the Maurya dynasty. For the first time a larger area of India was united extending from the Khyber Pass in the northwest to the Deccan. The reign of Aśoka marks the high point in the political, religious and artistic development of the empire founded by Chandragupta, but none of the monuments produced in the first great period of Indian art have left the country.

On the other hand, the Early Andhra period, notably the Great Stupa at Sāñchī, is represented by a few fragments of sculpture outside of India. In the Heeramaneck collection there are two important carvings associated with this monument. One of these is in the form of two addorsed tree dryads (Fig. 1). The other is a fragment showing the breasts and back of a large female figure (Cat. No. 2). Both examples are of light sandstone, characteristic of the Sāñchī carvings, and can be dated about A.D. 10–25.

The larger of the two Sāñchī pieces shows two yakshīs, or female tree spirits, back to back, each grasping with her right hand a branch of the tree above. The feet of both figures are broken off, but probably were originally entwined around the trunk of the tree. This is a frequent motif in early Indian art suggested by popular legends which told of the power of women, or yakshīs, to bring trees into

Fig. 3
Railing pillar with a bejewelled woman and Mithuna *pair*
Mathurā c. A.D. 25–50
Red Sikri sandstone. 21 × 9½ in.
The Arts of India and Nepal: The Nasli and Alice Heeramaneck Collection *Catalogue No. 13*
Courtesy, Museum of Fine Arts, Boston

flowering by embracing the trunk or touching it with their feet. The yakshī, characteristically portrayed here, is an important fertility symbol, for she not only stands for the bride and sap of the tree, and therefore its life-fluid, but in a larger sense represents the life-giving power of all creation, symbolized by the great waters in which all existence was believed to have had its origin. The yakshī is ultimately a descendant of the ancient mother-goddess, portrayed in countless terra-cotta statuettes of the Indus Valley.

Figures of tree spirits were prominent in the decoration of the railing and gateways of the Bhārhut stupa, completed in the first century B.C. They are also present on the four gateways, or *toranas* of the Great Stupa at Sāñchī, ascribed to the first century A.D. where they were placed between the outer ends of the lintels.

The second Sāñchī piece in the exhibition, although only a fragment of a large female figure, still conveys something of the volume and monumentality of the original (Cat. No. 2). A string of beads can be observed around the neck and falling between the breasts. It is decorated with two miniature statues of a woman. Although the head of the main figure is missing, the hair can be seen on the side, divided into large loose plaits, through which two rolled garlands of flowers have been passed.

It is not until the period of the Kushan rulers and their followers in northwest and central India, in the early centuries of the Christian era, that we arrive at the first historic style in Indian art which can be studied from actual examples in the West. The Heeramaneck collection can boast of several important examples of Indian sculpture of both the Mathurā and Sārnāth schools, as well as the Gandhāra school of northwest India.

The Kushans were a branch of the Yüeh-chih tribe of nomads, who had came to Afghanistan from Kansu province in China. The Kushans completed their conquest of the Kabul valley and the Gandhāra region in northwest India about the middle of the first century A.D. Under the patronage of the Kushan emperors, notably Kanishka and his successors (c. A.D. 144–241), Buddhist art flourished and gave rise to the development of two famous and important centres of Buddhist sculpture, the Gandhāra and the Mathurā schools.

The geographical location of the Gandhāra school covered the area of northwest India, present-day Pakistan, and a close commercial and cultural relationship was established by the Kushan rulers with the Roman empire of Augustus and his successors. As a result the Gandhāra school is distinguished by a hybrid style combining predominantly Buddhist subject matter with stylistic forms of primarily Western Asiatic or Hellenistic origin.

The school of Mathurā (modern Muttra), on the other hand, flourished at the southern Kushan capital on the Jumna river south-east of Delhi. It represents an essentially indigenous style, derived from concepts and traditions which go back to the art of the Maurya and Śunga dynasties, and at times even shows links with the Indus Valley civilization. The Mathurā images were carved from the characteristic, local red sandstone quarried at nearby Sikri, distinguished by its warm reddish colour, often marked by spots of yellow and white. The exhibition includes a number of examples illustrating the sculpture of this important school, from both the Kushan and the succeeding Gupta periods.

A particularly fine and interesting example is the railing pillar with relief decoration of a bejewelled woman and a *mithuna* pair (auspicious couple), which dates from circa A.D. 25–50 (Fig. 3). The pillar was originally part of a railing surrounding a Buddhist stupa, similar to the fragment decorated with the head and upper torso of a yakshī in the collection of the Royal Ontario Museum (Fig. 4).[1] The Heeramaneck example shows the upper half of a young woman wearing elaborate jewelry, including a beaded necklace around the neck and an angular woven chain falling between the breasts. In her right hand she holds a fluted cup, distinctly West Asian in type, which perhaps contains a votive offering. Above her head can be seen the branch of an *aśoka* tree with realistically carved branches. At the top of the relief, and above a small stupa railing, are the heads of a man and a woman. The latter, on the left, wears heavy earrings consisting of round beads and is touching her lips with her right index finger. The emphasis upon elaborate jewelry and the high degree of realism, particularly in the leaves of the tree, suggest a date in the second quarter of the first century A.D., when this style was characteristic of the work of the Mathurā school.

The more simply carved railing pillar in the Museum's collection, also from Mathurā, shows a

lesser amount of realistic detail. The figure is depicted against a plain background, but there are similarities in the emphasis upon the personal ornament of the yakshī and in the use of the railing motif above her head. The yakshī in this instance holds a mirror in her left hand, but the surface of the stone is badly worn and chipped, and it is difficult to discern what appears to be the bough of a tree above the railing motif. The reverse of the fragment is decorated with two lotus medallions in low relief and on each side of the pillar are two oblong openings to hold the horizontal crossbars of a stupa railing. The pillar may be somewhat later than the Heeramaneck example and is assigned a date in the first to second century A.D.

The visiting Heeramaneck collection and the collection of Indian art in the Royal Ontario Museum complement each other well in examples

Fig. 4
Railing pillar with yakshī
Mathurā, 1st–2nd century A.D.
Red Sikri sandstone.
Royal Ontario Museum Acc. 959.119

Fig. 5
Head of Bodhisattva
Gandhāra district of the Jellālābād region, Afghanistan, c. 4th–5th century A.D.
Stucco. 10½ × 7½ in.
The Arts of India and Nepal: The Nasli and Alice Heeramaneck Collection *Catalogue No. 21*
Courtesy, Museum of Fine Arts, Boston

Fig. 6
Head of the Buddha
Mathurā, c. A.D. 475–500
Red Sikri sandstone. 12⅝ in.
The Arts of India and Nepal: The Nasli and Alice Heeramaneck Collection *Catalogue No. 19*
Courtesy, Museum of Fine Arts, Boston

from the early centuries of the Christian era. The Heeramaneck collection is strong in sculpture of the classic period of Indian Buddhist art, illustrated by a number of exceptionally fine examples from the Kushan and Gupta periods, from the sites of Mathurā as well as Sārnāth. The Sārnāth school is especially famous for the high degree of perfection and sophistication attained by its sculptors during the Buddhist florescence of the 5th century A.D.

The Royal Ontario Museum, on the other hand, is especially rich in the hybrid and problematical but important art of the border region of northwest India. The peculiar nature of Gandhāra art, stylistically derived from western Asia and the Roman Empire but adapted to the spiritual requirements of Indian Buddhism, is illustrated in the present exhibition by the relief of Devas and Animals from a scene in the Visit of Indra (Cat. No. 12) and by the stucco head of a Bodhisattva, from Gandhāra or the Jellālābad region of Afghanistan (Fig. 5). Stone, notably a characteristic dark bluish-grey schist, was the most popular medium of Gandhāra sculpture from about the first to the third century A.D., when the use of stone gradually declined. Stucco sculpture was also widely produced during the first full flowering of Buddhist art in the Gandhāra region from c. A.D. 75–250, and became popular again in the late fourth and fifth centuries, especially in Afghanistan. The head in the Heeramaneck collection is assigned to the fourth to fifth century on the basis of its style and general characteristics.

The youthful head has a soft, dreamy quality, suggested by the half-closed eyes and the inclination of the head to one side. The almond-shaped stylized eyes and the treatment of the mouth and wavy hair are typical of this late phase of Gandhāra art. The *ushnisha*, or cranial protuberance, one of 32 sacred marks of distinction of the Buddha, is shown here as a top-knot of hair. This stylistic mannerism is typical of works of the Gandhāra school where artists, perhaps many of them foreigners, often misinterpreted Buddhist iconography.

Very different is the red sandstone head of a Buddha from Mathurā, a work of the last quarter of the fifth century, when Buddhist art of the Gupta period was at its height (Fig. 6). The head typifies the classic Gupta style and represents perfection of the Buddha image at this time. The individual parts of the head are successfully combined to effect a maximum degree of expressiveness, representing the Great Teacher as a superhuman being. By comparison with the youthful, humanized Gandhāra head, the Mathurā example conveys a serene, deeply spiritual mood. Prominent are the crisply carved snail-shell curls of the hair covering the *ushnisha*, the over-all stylization of the brows, eyes and thick sensuous lips, full cheeks and the abstract proportions of the head, whose contours describe a perfect oval. The Gupta artists adapted the semi-classical Gandhāra type to the religious requirements of Indian Buddhism and produced a highly effective cult image, which served as the standard formula in India and ultimately inspired the Buddhist art of all Asia. The head in the Heeramaneck collection is a supreme example of the spiritual ideals expressed at the height of the Gupta

florescence of Buddhist art. It reflects a strict observance of prescribed canons of proportion and a careful representation of the sacred marks which distinguish the body of the Buddha from that of ordinary mortals. The head closely parallels that of a large standing figure in the National Museum, New Delhi.[2] This image illustrates the emergence of the fully developed Buddha type, with sensuous body of idealized proportions, wearing thin, transparent garments which reveal the body underneath.

The political fortunes of the Gupta empire declined in the sixth century following the invasion of the White Huns, and by the seventh century Buddhism had largely disappeared from northern India. In the south, Buddhism had gradually been superseded by the rising tide of Hinduism, and after the collapse of Gupta rule Buddhism survived as a major force only in Bengal, where it continued to flourish under the Pāla and Sena dynasties (A.D. 730–1197) until the final destruction of the Buddhist establishments by the Mohammedan invasions of the twelfth century.

The art of the Pāla school is essentially an outgrowth of the classical traditions of the Gupta period. This is illustrated in the Heeramaneck collection by the very beautiful black chlorite stele from Bihar, with representation of a seated Buddha in the earth-touching gesture (Cat. No. 29). The Buddha is seated on a throne supported by three lions, his feet are interlocked and the hands display the *bhūmisparsa-mudrā*, with the extended fingers of the right hand touching the ground. The smooth, abstract modelling of the body of the Enlightened One is clearly revealed beneath the thin, transparent robe, in a style evidently derived from the canons of fifth- and sixth-century sculpture of the Sārnāth school. The stele is given a date in the late eight or ninth century and this is almost contemporary with a Pāla stele in the Museum's collection, ascribed to the ninth century (Fig. 7).[3]

The Museum's stele shows a greater degree of abstraction and stylization, notably in the smooth surfaces and undulating lines of the body, and in the elegant, flowing lines of the contours, but the carving is still handled with great subtlety. There is as yet no heavy overlay of decorative detail, as seen in the late Pāla sculpture in the ROM dating from the eleventh century, with a representation of Sūrya driving the solar chariot.[4] With this example we have clearly reached the final phase of Pāla sculpture, marked by an increasing dryness and the use of rich decorative detail, accompanied by a corresponding falling off in technical accomplishment and refinement.

The revival of Hinduism which gradually supplanted Buddhism following the collapse of the Gupta empire, gave rise to the powerful Hindu sculpture of the Indian Medieval period, an era famous for the construction of magnificent temples, especially in central and southern India, which required a tremendous outpouring of Hindu sculpture to decorate the walls of these enormous structures. The Heeramaneck collection includes a number of outstanding examples from the period of the Hindu renaissance, several of them heroic in size, which help to convey an impression of the richness and splendour of Hindu sculpture (Cat. Nos. 31–49). The complexity of Hindu mythology and thought required a vast pantheon of deities and other heavenly beings, who provided an enormous wealth of material upon which sculptors, painters, and other craftsmen could draw. Indian sculpture of the Medieval period is, as a result, unusually rich and varied in content.

Under the patronage of the Chalukyas (A.D. 550–753) and their successors in the Deccan, the Rasthrakūtas, the great sculptured Kailāsa temple at Ellora and the famed Saivite sanctuary at Elephanta in Bombay harbour were produced. Today, they rank among the great wonders of Indian architecture and sculpture. Somewhat later, about A.D. 1000, a vast complex of temples remarkable for their size and the soaring height of their towers, was erected at Khajurāho in central India, under the patronage of the Chandella sovereigns. The temples were elaborately ornamented with a rich overlay of sculpture. The intense Indian sunlight adds a vibrant texture to the beautiful proportions and strong curvilinear contours of the architecture.

In southern India, architecture and sculpture flourished under the patronage of the great Chola dynasty. Their rulers were responsible for an enormous output of sculpture in stone as well as bronze, and for the construction of the huge Rājrājeśvara Temple at Tanjore, dedicated to Siva.

Typical of the sculptural style of Khajurāho is the example in the Heeramaneck collection with representation of a Surasundarī, or celestial female, in high relief (Cat. No. 42). The sculpture is carved from a greyish beige stone and is related in style to

Fig. 7
Buddha with attendants
Bihār, ninth century
Black chlorite.
Royal Ontario Museum Acc. 961.171

a very similar representation of celestial beings seen on the Vivanātha Temple of Khajurāho, completed about A.D. 1002. The principal figure, semi-nude but heavily jewelled and with her hair dressed in an elaborate fashion, is standing on a double stemmed lotus pedestal, while a second female attendant can be seen in the background. The sensuous qualities of the figure, in exaggerated contraposto pose, are heightened by the soft, swelling forms and large breasts, but unlike the soft modelling and subtle treatment of the contours of the Sāñchī yakshī (Fig. 2), the Indian artist of the Medieval period treats his figures on the basis of a more abstract formula, with the modelling of the body conceived with almost mathematical precision as a series of curves plastically rendered. The goddess is no longer the simple fertility symbol of early Indian art, but is transformed into a Saktī, a manifestation of the female energy of the divine itself. The treatment of the figure is closely related to that of a female torso in the Royal Ontario Museum, believed to have come from the Khajurāho area and datable to the eleventh century (Fig. 8).[5] The heavily jewelled torso forms a sharp S-curve and is distinguished by predominantly abstract modelling of swelling curves and an emphasis upon the plastic volume of the body. Compared to the Sāñchī yakshī the modelling is again more abstract and mathematically conceived, though it conveys at the same time a stronger sense of fullness and plasticity. The torso is typical of the more abstract treatment of the female form and heavier emphasis upon elaborate jewelry, as compared to the classic period of Indian art.

In addition to the stone sculpture and Indus Valley clay images already discussed, two other major sections of the exhibition include the bronzes and paintings, but only brief mention can be made of these within the space of this article. The metal images in the collection have come primarily from three areas: Kashmir, the Pāla empire of Bihar and Bengal, and Nepal. There are also examples from western India, the far south, and Java, reflecting the widespread and early use of metal images throughout India and neighbouring areas under her cultural influence.

Buddhism was the first of India's major faiths to favour widespread use of religious images to spread the doctrine far and wide. Thus, the first great wave of Indian sculpture stemmed from the strong impe-

tus and the inspiration provided by Buddhism. Sculpture was predominantly stone, but ultimately the art of bronze casting also became popular, and the earliest bronze icons in the exhibition are Buddhist. The Buddhist bronzes mostly reflect sculpture in stone and express some of the major Buddhist spiritual values—contemplative calm, divine compassion and grace. Other bronzes, mainly after the decline of Buddhism, express the aesthetic ideals of Hinduism and emphasize the heroic superhuman aspects of the great gods.

One of the finest and most unusual bronze icons in the exhibition is the Four-faced Vishnu (*caturmūrti*) from Kashmir, shown with two attendants and devotee (Fig. 9). The image is cast from a light alloy of bronze and has inlays of silver in the eyes of Vishnu, the attendants and devotee, and bands of copper in their skirts. It is probably a product of the ninth century A.D., but a precise date for such sculpture is difficult to determine because firmly dated comparative material is lacking. The figure may be compared to the well-known Gupta stone torso of Vishnu from Mathurā, in the Museum of Fine Arts, Boston,[6] which again shows the human face of the god flanked by the lion and boar heads, symbolizing two of his earlier incarnations. The Heeramaneck figure is even more closely related to the famous four-headed figure of Vishnu in black stone from Avantipur, dating from the ninth century.[7] Images of Vishnu, like the one in the exhibition, were popular in northern India and originated from the teachings of the Pāñcarātra creed of Vaishnavism. One of its major centres seems to have been Kashmir.

The bronze Vishnu stands in a slight *tribhanga* pose with the right hip thrown out and the weight of the body on the right foot. Two of his hands hold the lotus and conch, while the other two rest on the heads of his two attendants, *gadā-nāri* and *cakra-puruṣa*, personifications of his principal weapons, the mace and the war discus. The small figure between the feet may represent the earth goddess Pṛthvī, while the kneeling female figure with a lotus at the right foot of the pedestal may be a devotee. The proportions and pose of the central figure of Vishnu still derive from the norm established for religious imagery during the Gupta period; and notably the S-curve of the body and elongation of the limbs recall the sculpture of the Sārnāth school. The surface of the figure has been smoothed and

Fig. 8
Female Torso
Central India, eleventh century
Reddish brown sandstone.
Royal Ontario Museum Acc. 934.31.7

Fig. 9
Four-faced Vishnu (caturmūrti)
Kashmir, c. ninth century A.D.
Light alloy bronze with inlays of silver in the eyes of Vishnu, attendants, and devotee, and bands of copper in their skirts. 18¼ × 10⅝ in.
The Arts of India and Nepal: The Nasli and Alice Heeramaneck Collection *Catalogue No. 51*
Courtesy, Museum of Fine Arts, Boston

Fig. 10
Amitābha surrounded by Bodhisattvas
Nepal, thirteenth–fourteenth century
8½ feet × 59 in.
The Arts of India and Nepal: The Nasli and Alice Heeramaneck Collection *Catalogue No. 121*
Courtesy, Museum of Fine Arts, Boston

worn from fluid poured over the image during religious ceremonies, and on the right side of the pedestal one can see a pouring spout, which was to drain off the ritual fluids. The four faces of the deity —the lion and boar, the demon face to the rear, plus the central, human face, are believed to represent four aspects of the deity's character—power in the case of the human head, wisdom symbolized by the lion, sovereignty and majesty by the boar, and *Śakti*, or energy, by the demon face in the rear. The unusual iconography and the exceptional quality make the figure one of the foremost examples of the less widely known art of bronze casting in Kashmir.

Painting (Cat. Nos. 110–220) and the Minor Arts (Cat. Nos. 221–283), including textiles, carpets, glass and jade, form a large and important part of the Heeramaneck collection, but it would require a further article to discuss them adequately. The three major schools which distinguish the painting of greater India—Jain, Rajput and Mughal—are represented in the exhibition by a large number of fine examples, which illustrate the enormous range of style and techniques flourishing in countless local schools, especially in India, Nepal and Tibet.

Jain painting, whose patrons practised asceticism and lived in complete withdrawal from the world, represents a western Indian style, comprising the area of Gujarat, south Rājasthān and central India. The painting of Jain manuscripts was on the whole highly conventional and formalized, yet lively and creative works illustrating traditional texts were produced at a number of centres. Jain painting often suggests traits derived from currents which later developed into the Rajput style; it also shows the influence of Sultanate (Muslim) painting.

In contrast to the high degree of stylization found in Jain painting the Rajput style is much freer and often characterized by great beauty and charm. The Rajputs were Hindu and painting was employed to depict the lives of the gods, often by scenes taken from the heroic exploits and romantic legends told in the great Indian epics. The Rajput style introduces a new freedom of format which is distinctly Indian and derives its unique character from a new social structure dominated by the Rajput princes, from the particular nature of Hindu subject matter, and from the devotional character of the Hindu faiths. Rajput painting had developed as a distinct style by the sixteenth century (Cat. No. 146) and although its early sources have never

been clearly traced it can be shown that the earlier painters of this school were influenced by Islamic painting.

Mughal painting represents yet a third distinct school of Indian painting as opposed to the Jain and Rajput styles. The Mughal style was formulated to meet the demands of the Mughal rulers who arrived in India in A.D. 1526, succeeding the pre-Mughal Sultans. Mughal painting enjoyed the benefits of imperial patronage and guidance after the establishment of the imperial workshops early in the reign of Akbar (A.D. 1556–1605), one of the most illustrious of Indian rulers and a great patron of the arts. Painters trained in various styles of Indian and Persian origin were brought into the imperial ateliers, where the new Mughal style soon emerged under the personal supervision of the emperor. Mughal painting is noted for its sensitive and poetic interpretation of nature, including the tender, lyrical rendering of plants and animals, and the production of a series of intimate and moving portraits of emperors and other personages. The paintings often reflect the sumptuous and elegant taste of Mughal India and provide a fairly accurate, though poetic account of the noble pastimes of the Mughal court.

The visitor to the exhibition will have ample opportunity to study the various styles of Indian painting from the many excellent examples shown, but the present article will be confined to the brief mention of a single painting of particular interest and significance. It is a large *tanka*, a distinctive type of religious painting on cloth, initiated by the Nepali painters under the influence of the Vajravāna, or Tantrik form of Buddhism (Fig. 10). This particular example belongs to a type known as a *paṭa*, a painting of images, as opposed to a *mandala*. A *mandala* is a magic diagram of a Buddhist hierarchy, usually with a central divinity within a circle, which in turn is within a square, enclosed by further circles and surrounded by various lesser deities (Cat. Nos. 125–126). The present painting of the thirteenth to fourteenth century is one of the largest of a group of *paṭas*, which perhaps represent the earliest known Nepalese paintings of this type. It belongs to a period when Buddhist art, having all but ceased in India after A.D. 1200, survived only in Nepal.

The *tanka* measures 8½ feet by 59 inches, and is carried out in gouache on linen, a technique distinctive to Nepalese painting. In the centre is the enlarged figure of Amitābha Buddha, seated cross-legged on a double lotus, and accompanied by two Bodhisattvas. Other divinities are shown in the upper and lower registers of the composition. The principal figure wears a striped skirt and is adorned with jewelry and a crown. The attendant Bodhisattvas, wearing similar jewelry and crowns, seem to float in their swaying postures contrasting with the symmetry and adamantine calm of the Buddha. The painting, which is stylistically related to contemporary manuscript illustrations, also has a certain erotic charm, implied by the sinuous flow of the line, the enigmatic expression and sensuous elegance of the bodies. While the composition and iconography seem to have been derived from Central Asian wall paintings, the brilliant colour scheme and monumental quality of the figures also recall the classic Gupta style of painting of Ajanta. The Nepalese *tanka* thus serves as an important link with the Buddhist art of India, at a time when this tradition had long been supplanted there by the rising tide of Hinduism.

NOTES

1. *Acc. No. 959.119. 13½ × 7½ inches.*
2. *H. Zimmer,* The Art of Indian Asia, *New York, 1954, Vol. 2, Pl. 101.*
3. *Acc. 961.171. 25$\frac{5}{16}$ × 15$\frac{5}{8}$ inches.*
4. *Acc. 964.11.*
5. *Acc. 934.31.7. 19¼ inches.*
6. *A. K. Coomaraswamy,* Catalogue of Indian Collections in the Museum of Fine Arts, Boston, *Museum of Fine Arts, Boston, 1923, Parts I–II, Pl. XIX (Acc. 07.1015).*
7. *D. R. Sahni, "Excavations at Avantipura,"* Archaeological Survey of India, Annual Report, *1913–14, Calcutta, 1917, p. 45, and Pl. XXVIII, Figs. b–c.*

Tending a gill net at winter camp north of Round Lake

Lacing hide for snowshoes

Within two worlds

by E. S. Rogers

The Ontario Indian lives within two worlds: his own world with its heritage of values, customs and rhythms and the world imposed by western society. Impingement by European culture has upset the fundamental structure of Indian life. Hunting, fishing and farming no longer provide adequate support. Their religion has been stripped away by missionaries who offered little in return except a hollow concept of Christianity.

At the same time, Indians have not become integrated or assimilated into the Euro-Canadian community. One reason is the mismanagement of the situation by Euro-Canadians. Another reason is the difficulty for one culture, especially one like our own, to reshape an alien one. Overwhelmed from without, the Indian is powerless. All he can do is conform as far as possible while he tries to cling to his identity.

In Ontario, these pressures and frustrations are felt by 50,000 Treaty Indians and approximately 50,000 non-Treaty Indians, the largest Indian population in Canada. The numbers are increasing steadily. Of all the ethnic groups in the province, the Indian population is the fastest growing. There are about one hundred Indian communities scattered throughout Ontario, ranging in size from less than one hundred to several thousand inhabitants.

Over the years, treaties have been signed in which the Indians have ceded their territory in return for small tracts of land to live on ("reserves") and four or five dollars annually per person in Treaty money. With a sharp decrease in their land area, hunting and fishing become severely restricted. This is especially true in the south, although in the extreme north the situation is not yet as acute. The Indians do receive additional consideration from the government. Education, health benefits, welfare payments, housing, and other allowances, are all provided without taxation for those who live on reserves.

There are signs of growing unrest among the Indians. In 1965, they organized a march on Kenora to protest discrimination, lack of job opportunities and inadequate attention to the serious problem of alcoholism. To understand the subtle areas of conflict requires considerable field work and a thorough knowledge of Indian life.

Ontario Indians may be grouped within two major language families. Those who spoke Iroquois were the main inhabitants of the southern regions while the north was occupied by those who spoke Algonkian dialects. Shifts in population did occur when the southern tribes of Huron, Neutral and Erie Indians were dispersed by the Iroquois of New York State in the mid-seventeenth century. Later, the Ojibwa, who spoke Algonkian dialects, moved into southern Ontario from the north shore of Georgian Bay to occupy areas held by Iroquoian

Scraping moose hide for moccasins and mittens

tribes. Ojibwa mainly occupied the central and northwestern part of the province while the Cree also Algonkians) lived in the northern area.

The Iroquoians were primarily horticulturalists, growing corn, beans and squash. Their villages contained multi-family "longhouses" surrounded by palisades. About every ten years, villages had to be abandoned because of soil exhaustion and depletion of nearby firewood. Socio-political organization was in clans with descent along the female line. Chiefs were male and the position was hereditary in theory, but the women had a strong voice in the government and were able to depose chiefs whom they felt were inadequate.

Part of the rich and complex religion evolved by the Iroquois was the False Face Society which dealt with real or imagined illnesses by elaborate ritual. The Iroquois believed the Society protected them from evil forces which could wipe out the entire community. Public demonstrations each spring and fall prevented disaster to the village; private rites were held to cure individuals. A tangible feature of the ceremony was the various masks, worn by members of the Society. The ROM has a particularly fine collection of these "faces."

The early missionaries tried to convert the Iroquois but had limited success. About 1800 a native prophet, named Handsome Lake, began to preach a combination of Christian and native beliefs. He tried to stamp out all medicine societies but only succeeded in driving them underground. Eventually, he was forced to relent and they functioned more openly. The False Face Society continued into the twentieth century but was far less influential. Today, it is believed that a weakened version of the Handsome Lake cult exists at the Six Nations reserve at Brantford where four longhouses stand for ceremonial purposes.

Unlike the Iroquois, the Algonkians were hunters and fishermen who did very little farming. Mobility was essential to their life and the birchbark canoe and snowshoe were important equipment. During the summer they camped in settlements of about one hundred people beside rivers or lakes where fishing was productive. In the winter the settlements disbanded into smaller groups which spread out to various hunting areas. Moose, caribou, beaver, bear, hare, water-fowl, whitefish, trout, and sturgeon were sought. Along the southern borders of their territory they supplemented their diet with wild rice and maple syrup. A few Algonkians had small plots of corn, beans and squash.

On the rounds of the trap line

Dispersal for the winter hunt prevented the emergence of strong control by the chiefs. Their religion revolved about the animals that were so important for food. In the western part of the province the Ojibwa had a curing society known as the *Midewiwin*, probably Ontario's first professional medical society. Each *Midewiwin* member owned a birchbark scroll inscribed with his personal mnemonic code of the various curing rituals. Traces may still exist in the northwest regions of the province but this is an unknown field.

Today Indians inhabit a wide range of environments in Ontario, from urban centres and rural communities to subarctic bush settlements. The intensity of European contact has varied greatly. On the basis of these two factors, the current problems of the Indians may be discussed according to four geographical regions in the province: north, northwest, central and southern Ontario.

In the harsh, unproductive subarctic climate of northern Ontario, there are widely scattered Cree and Ojibwa settlements. Fur-trapping undertaken for trade and hunting and fishing for food have been the traditional way of life—hard but personally satisfying.

The Indians of the north, in contrast to the southern groups, have been far more isolated from the white man. Their contact with the early traders did not substantially alter their way of life. Only recently have they been confronted with the full impact of western technology. Until 1949, the Round Lake Ojibwa (historically known as the Crane Tribe) were so remote, they did not have a full-fledged trading post in the vicinity. Today, they are equipped with telephones and ski-doos.

Aside from these amenities more serious changes have occurred within the last 10 to 15 years and a virtual welfare state now exists. A significant increase in the population is partly responsible for the new problem. After the second World War there was concern for the health and welfare of northern Indians who had a very high death rate. Tuberculosis was the chief killer. Indians who lived through the thirties and forties vividly remember when many spent long years in sanatoriums. Once health measures were inaugurated, educational facilities were established throughout the area, resulting in a school in almost every village. Formerly, many children had been sent to residential schools in the south while their parents worked on the trap lines. Now that there are local schools, the parents must remain in the village to care for the children and trapping is neglected. With the great increase in population, the reduction in fur-trapping and the lack of alternate industry, welfare subsidies increase of necessity. The Indians are not at fault and the Euro-Canadian is not fully to blame. But when humanitarian plans are devised, the side effects are seldom visualized.

Hopes for long-range improvement of the situation might seem brighter because of increased educational advantages. But this too has been mishandled. The children enter school speaking only Cree or Ojibwa. They follow a curriculum designed for the south which is meaningless in the north. In these conditions, few reach more than grade two or three after six to eight years in school. Furthermore, schooling prevents them from learning the skills of their parents which would enable them to exploit the natural resources of the area. Nor are they sufficiently trained to do anything else. The income from fur-trapping is lost and potentially valuable citizens are wasted.

It is now being realized that a new way of life must be devised to suit the more sedentary life of the Indians. Programmes are being implemented and some show promise of success but they affect a small proportion of the population. Commercial fishing was begun in the thirties in a haphazard fashion. In the late 1950's a concerted effort was made to improve conditions through training in better techniques of fishing and processing. The Round Lake Ojibwa, 200 miles north of Sioux Lookout, adapted admirably and until last year the group earned thousands of dollars annually. Unfortunately, there are not enough fish in lakes within their territory to support local population of nearly 300 Indians. Each family head at Round Lake received approximately $500 a year from fishing—other villages in the scheme did not do nearly as well. During 1967 the bottom fell out of the fish market and income dropped to one-third. This is the hazard of a one-crop economy and alternate industry must be found.

Attempts to introduce tourism into the area are relatively new. At Sutton-Hawley Lake, 50 miles south of Hudson Bay, several Indian families have started a sports fishery which relies on the high population of speckled trout. This is a unique venture since few places in northern Ontario have such favourable conditions for trout. The south end of James Bay has long been known to sportsmen for fall goose-hunting and the area is now expanding to take in the coasts of James and Hudson Bay. A goose camp has been operating at Fort Severn on Hudson Bay for the past four years. The four-week season provides about one-third of the group's

Making a gill net in Big Beaver House, near Round Lake

income. Goose-hunting camps are being established at Fort Albany, Kapiskau, Attawapiskat and there is hope for Winisk.

But this is seasonal employment and only offers a partial solution. There is a desperate need for an effective adult education programme in this area. All that exists at the moment is a very limited course in English. The Indians must be taught how to run an efficient tourist industry. There is a great danger that experienced tourist operators from the south will move in and take over.

No sound economic base for the north has been discovered, nor an over-all policy defined by which the Indians can develop the country for themselves and assume their rightful place in society.

Moosonee is a case in point. Economically, there may be hope with the possibility of new mines and the utilization of peat deposits, but no integrated social, economic and cultural programme for the Indian has been initiated, or even conceived. It is true that a large school project is being planned for Moosonee, but no provision is being made to place its graduates. Without that, the project is destined for failure.

The situation in northwestern Ontario is somewhat different. Morale is very low here. The Indians have had a long, unhappy association with the Euro-Canadians. In the early days of the fur trade, they suffered directly from competition among the traders who won the Indians' favour with excessive amounts of liquor. Later, imported diseases such as smallpox decimated the populations. And the early depletion of game left the Indian with short food supplies and few furs for trade.

Indians receive Treaty money at Big Trout Lake

Today a sound economic base is still lacking, afflicting Euro-Canadians who also find it difficult to earn a living in the northwest. The little employment available to the Indians is usually seasonal. There is some fur-trapping but it is not too important. Wild rice is gathered in the fall for sale to commercial companies who usually operate outside the area. But wild rice is a very unreliable crop and some years there is none at all. Some Indians work during the summer and fall at the tourist camps but this too is seasonal. Limited commercial fishing provides another small source of income.

Perhaps the most important industry in the area, aside from the tourist establishments, is the lumber camps and mills. The Indians are noted as excellent mill workers and loggers but employers usually favour "white" labour and hire few Indians. Often the Indian communities are nearby and a valuable work force could be tapped. Employers claim that their reluctance to hire Indians stems from their poor attendance records on the job. Most of the lumbering industries are marginal and to be profitable the work force must be in full attendance.

Individual counselling could be an effective means of keeping an Indian on the job. If a man has been absent on a "binge," often shame and guilt will prevent him from reporting again. He needs reassurance, encouragement, and a buffer between him and company officials. As an experiment, industries might allow for a certain percentage of absenteeism and hire more staff than required. To prevent loss to the company, the government might subsidize the cost of extra salaries to increase Indian employment. This measure is far less demoralizing than welfare hand-outs. Over the generations the Indian would gradually become integrated into the labour force. It is the long-range plan that is needed.

At the moment the Indian is trapped in his present situation. He is not equipped to move to more prosperous areas where employment is available. Education facilities have long been established in the region, but they are still inadequate to raise the Indian to the level required in urban centres and they offer no training in skills that can be used anywhere. While programmes of

retraining have been initiated they are short-term and neglect the necessary background which enables the Indian to move elsewhere.

Unemployment means idleness, and in some cases, alcoholism. This feeds discrimination and contempt by the whites, which in turn lessens opportunities for employment. The Indians' resentment of the white man intensifies and morale sinks further.

In order to maintain some form of social and cultural life many Indians have turned to various nativistic movements. Definite information is difficult to obtain and what we do know is sketchy at best. It is believed that the Medicine Drum Dance, derived from the Indians of the west, is practised in the northwestern region of Ontario. It also is suspected that the *Midewiwin*, the curing society composed of both men and women, has been revived. Peyote, a hallucinatory drug, may or may not have entered the area, but other "medicines" undoubtedly are being used. Alcoholics Anonymous has been taken over by Indians, many who rarely or never drink, and has been converted into a semi-secret club for men where only Ojibwa is spoken.

The Indians who live in central Ontario from Lake Nipigon to Lake Nipissing suffer similar conditions—with one essential difference. Many Indians here are not living on reserves, which means that they are members of the municipalities and not eligible for the benefits provided by the Indian Affairs Branch. Some of these municipalities are railroad towns which are slowly going out of existence because of new technological advances. Economically, it is a depressed area. The few lumbering companies in the region employ a number of Indians but opportunities are limited. Euro-Canadians can move out of the district but the Indian is restricted by lack of education.

Southern Ontario, whose population is overwhelmingly Euro-Canadian, presents vastly different circumstances. Here the Indian adjustment to Euro-Canadian society has had its greatest success. There is a reserve system, but it is estimated that at least half the Treaty Indians have left the reserves. Unfortunately, little is known of the people who leave. It is thought that between 5,000 and 15,000 Indians have come to Toronto, where many are employed in skilled or professional positions.

For those who remained on the reserve, life has changed drastically in the past few years. During the nineteenth century and into the twentieth, most of the Indians lived like rural Victorian farmers, working the land and earning an adequate income. With the advent of mechanized and commercial farming, this is no longer possible. On many reserves, the Indians prefer to lease their land to Euro-Canadian farmers and work elsewhere.

Today, perhaps the major income for the reserves comes from leasing the land to tourists for cottage sites. Other reserves have been established as parks where visitors are charged admission. A few individuals produce some handicrafts for sale but it is not an extremely profitable business.

Education in southern Ontario has been somewhat better than in the other regions, but in many cases it is still not sufficient to allow easy movement into wider society.

Indians have abandoned most of their traditional observances, but attitudes and values remain from the past. It is often this area of covert culture which produces misunderstanding and frustration. Saving for the future was never part of the culture of a people who lived from the natural resources of the land. Material possessions are viewed casually, a completely different view from our own. They have a strong sense of hospitality and generosity in which all must share equally. Time, for the Indian, is not regulated by the clock but gauged by the time needed to complete a task.

Hatred for the white man has developed and is passed on to the children. Some non-Indians have earned trust and respect but in general the white man is resented. He has severely insulted and alienated the Indian over the years in a number of subtle and direct ways.

The Euro-Canadian treats Indians like children. This attitude has permeated government and private agencies and ordinary citizens who set themselves up as "do-gooders." They always order and instruct and rarely listen. Only recently have Indians been treated like citizens with rights to vote and drink.

The portrayal of the Indian in films, television and literature as a "blood-thirsty savage" who always "massacres" the defenseless whites is annoying and upsetting. The Indians are continually embarrassed by terms like "Indian giver," "brave," "chief," "red-skin," "savage" and "squaw." All of

these are derogatory and appear, of all places, in school texts, inculcating our own children with a false image of the Indian.

Welfare payments may be needed but Indians feel they are in danger of becoming a nation of mendicants. The government often seems to be more interested in giving hand-outs than providing employment. Recently a case was reported in which the Indian postmaster of a northern community was thinking of quitting his job and living on welfare. The welfare payments were higher than his salary.

Give-away programmes of material aid are offered to Indians: house building, schools, hospitals and so forth. The guilty conscience of the Euro-Canadian and his excessive emphasis on materialism as a way to happiness inspires these programmes.

The reserve system is responsible for a host of problems. It was a mistake to establish the reserves in the first place, but now they cannot be abolished. The Indians cling to the reserves as the last vestige of territory they have left in a land which once was theirs. Now that a programme of leasing reserve land to tourists has been initiated, the Indians are suspicious of the white man. As one Indian recently stated, the white man established reserves in areas that were of no use to them at the time. Now that the tourist industry has made the area desirable, the white man seems to be trying to secure the remnants of the Indians' land.

The property on reserves belongs to the band. This means that a member who resides on the reserve cannot, for example, use his house as collateral to get a loan at the bank. Thus it is practically impossible for an Indian to do anything to improve his lot or to establish an industry on the reserve.

Other annoying features are the problems related to Treaty rights and various court decisions affecting them. Treaties were made which guaranteed Indians the right to hunt and fish all year round on the reserves. Then without consultation with the Indians, the Canadian Government entered into an agreement with the United States and Mexico known as the Migratory Bird Act. The Act imposed rigid hunting seasons and limited the kill of waterfowl, which negated original Treaty rights.

Another anomaly in the regulations concerns the marriage laws. The Indian Act states that a Treaty Indian woman who marries a non-Treaty person loses her Treaty status and the benefits that go with it. But a Euro-Canadian woman who marries a Treaty male becomes a Treaty Indian even though she may be a blond, blue-eyed Scandinavian.

Another recent example of the poor way in which the Euro-Canadian treats the Indian involves the centennial projects established for Indian peoples of Ontario. They were expected to hold pow-wows. The Indian was not allowed to choose the programmes he wanted to implement and, furthermore, really did not care in the least about celebrating the loss of his land.

Accidents of fortune make individual escape possible. There are Indians, particularly in southern Ontario, who have "made it." They assume a mask and although they may not enjoy it, they manage reasonably well. There are Indians, especially in the northwest region around Kenora, who have given up. There is still hope for Indians of the subarctic region to the north. Their contact is primarily with other Indians which reinforces feelings of confidence and pride of identity.

Perhaps previous attempts to find solutions have made only partial headway because they are all group-oriented. Group plans, though necessary, are not the whole answer. The solutions will eventually have to come at the individual level. The person and his desires in the scheme of things must be emphasized. Indians with ambition who try to start businesses or obtain further education are often thwarted by regulations imposed for the group.

Effective counselling may be the answer. In the north, it would probably take the form of advice on educational, vocational and business matters. A buffer or mediator is needed between the individual Indian and white officials, including Community Development Officials. Someone who can give a sympathetic hearing and coordinate and institute various services is needed. The Indian of Southwestern Ontario has fared somewhat better, especially around urban regions like Toronto, where rather tolerant and sympathetic contacts do exist if they can be found.

Effective counselling is not a revolutionary proposal, but it is one of the most difficult to implement because it requires exceptional people. No grandiose schemes, no quick answers will solve the "Indian Problem." It must be a long-term programme spanning as much as four generations.

Spotlight

Comments on current and future events and activities at the ROM.

A rare Egyptian wall painting is on display in the Main Rotunda of the Museum until April 28. The showing is part of efforts to raise twenty-five thousand dollars by public appeal to buy the work of art for the ROM permanent collection.
The painting is from a famous private tomb at Thebes dating from the reign of Amenophis III (1410–1372 B.C.) Lent by an anonymous European collector, the fragment from the all-over decoration of the tomb is eleven inches high by nine and one-half inches at its widest. It shows two relatives bringing offerings of lotus flowers and ointment to the occupant of the tomb, a royal sculptor named Ipuky.
Ancient Egyptian relief sculpture, carved in stone, may be seen in many North American museums and is particularly well represented at the ROM. But a wall painting, such as the one displayed, is seldom seen outside Egypt because the mud plaster on which it is executed is so very fragile. Remarkable for the freshness of colour and lively and sensitive line, this wall painting reveals far more clearly than does painted relief sculpture the virtuosity of ancient Egyptian draftmanship.

The current public campaign to obtain the Egyptian wall painting recalls last summer's enormously successful children's campaign to purchase a **Protoceratops Dinosaur.** In exactly 15 weeks, that drive, spearheaded by five youngsters, not only raised the necessary fifteen hundred dollars for the dinosaur skeleton, now displayed in the second floor Vertebrate Palaeontology gallery, but also added almost two hundred dollars to the Museum general purchase fund. Apparently the combination of dinosaurs and children is irresistible.

The arts of India and Nepal exhibition makes its only appearance in Canada at the ROM January 23 to March 10. Organized by the Boston Museum of Fine Arts, the exhibition is from the collection of Nasli and Alice Heeramaneck. As well as Boston, it previously has been shown at The Los Angeles County Museum, the Detroit Institute of Arts and the Virginia Museum of Fine Arts. Be sure to obtain a copy of the outstanding catalogue which is available at the Museum sales desk. The price is $3.60 to Museum Members, $4.00 to non-members. On two evenings, January 25 and February 22, the exhibition will be open until 10 p.m. and on both occasions there will be special lectures related to it. On January 25 Dr. Pratapraditya Pal, Keeper of the Indian Collection at the Boston Museum of Fine Arts, speaks on "Vision and Illusion: An Inquiry

On display in the Main Rotunda is the colourful original fragment of this ancient Egyptian wall painting

into Tibetan Painting." The speaker February 22 is Benjamin Rowland Jr., who is Gleason Professor of Fine Arts at Harvard University's Fogg Museum. His topic will be "Masterpieces of Early Indian Sculptures." Both lectures begin in the Museum Theatre at 8:30 p.m.

Sunday afternoon concerts, ranging from baroque to electronic music, are an important new event for the ROM. Four concerts, one every other Sunday, will be presented at the Sigmund Samuel Canadiana Building, starting February 11. The other dates are February 25, March 10 and March 24.
One programme will feature French Canadian folk singer Jacques Lebreque. On stage and on CBC broadcasts, he has delighted audiences with his dramatic presentations of slyly humorous songs about life in *La Belle Province.*
Composer and conductor Otto Joachim will appear with his distinguished group, Ensemble d'Instruments Anciens de Montreal, in another of the concerts. They will perform baroque works on their own collection of early instruments.
Electronic music, with all its intricacies and possibilities, will be another programme. It will be prepared by Professor Gustav Ciamaga, head of the University of Toronto Electronics Music Studio, in collaboration with Toronto composer Norma Beecroft. Miss Beecroft, a CBC music programme organizer, has written several electronic compositions. She has been primarily responsible for arranging the entire ROM concert series.
The fourth programme in the series will be of contemporary Canadian music. It will be performed by singer Mary Morrison with Robert Aitken on flute and Marion Ross at the piano. All three have given numerous concerts and appeared on the CBC.
All concerts will start at 3 p.m. and tickets will be available at the door. Watch for further details about this series which promises to be a highlight of the Toronto music season.

Spendlove memorial lecture will be given by Dr. Hilda Neatby on February 15. Dr. Neatby, head of the department of History at the University of Saskatchewan, will describe the life of a shrewd French Canadian merchant in Montreal immediately after the British conquest of Quebec in 1759. She will illustrate the lecture with slides of paintings and drawings showing life of the period.
The lecture is in memory of the first Curator of the ROM's Canadiana Department, F. St. George Spendlove.

In the next issue of Rotunda will be a report by **Cuyler Young** on his excavations in Iran. Dr. Young, Curator-in-Charge of the West Asian Department, and his party made several important archaeological discoveries. At the same time they discovered a native feud swirling around their camp that resulted in slayings and woundings among the natives and a need for all-night armed patrols.
In another article, **Gerard Brett,** Research Curator of the European Department, takes a close look at medieval drinking customs in England and the containers that were used.
These are among the features that will appear in the next issue of ROTUNDA, to be published in April.

Fig. 1 St. Catherine of Alexandria. Austrian, late 14th century. Acc. 965.98

Fig. 3 Roundel from the upper tracery of a Trinity window. South German, perhaps Augsburg, 1490–1510. Acc. 958.119.2

Seven stained glass panels

by H. Hickl-Szabo

Until 1958 the European Department's large collection of glass consisted only of vessels, dating from the sixteenth to the nineteenth century. Some of these are coloured glass and can undoubtedly be called "stained glass," since any glass coloured in its liquid state by the addition of metallic oxides is technically stained glass. However, the term is usually reserved for antique windows.

For the purpose of this short article, it is convenient to divide these panels according to technique into two broad groups. The first contains those which are predominantly mosaics of coloured glass with a few very basic lines painted in black pigment (Figs. 1–3), the second, those which are in fact paintings on glass (Figs. 4–6). Light, so necessary to the appreciation of any art, is the very life blood of both groups.

Until the fourteenth century a craftsman was only able to use pieces of glass each of which had a single pot-melted colour. Details such as faces or hands were indicated by the baked-on black pigment (the direct flesh technique[1]), while the lead strapping served as dividing lines in the design. After this date it gradually became possible to apply two or more colours to a single piece of glass. In our second group faces, for example, have shading to bring out all their details (the finished-flesh technique[2]).

The art of making stained glass is closely related to the development of church architecture. Until

Fig. 2 A donor panel.
English, about 1400. Acc. 961.123.91

about 1200, with very few exceptions, the windows were only a modest decoration. After that architects, aware of their unique ability to capture the eye and create an atmosphere of mystery and wonder, began to make them focal points.

The earliest windows that remain today are late Gothic or early Renaissance examples dating from the fourteenth, fifteenth or early sixteenth centuries. Their charm lies in their often naïve character, their beautiful colours, the craftsmanship of their heraldic emblems or the decoration of their framework. Stained glass of high quality, never common, is now becoming increasingly difficult to find. Windows from churches, town halls or castles, if not still *in situ*, are in public or private collections, and if any do come on the market the prices are exorbitant. The pieces described here form the successful beginning of a ROM collection. The fine quality and the representation of English, German, Swiss, Flemish and Austrian workshops make their acquisition a double accomplishment.

The Austrian panel (Fig. 1), dated about 1385, depicts Saint Catherine. It is High Gothic in period, and a superb example of the so-called International style. Its design is sophisticated; the canopy shows a full understanding of perspective, and courtly elegance is reflected in the face and dress. These are the marks of ripeness and indicate that patrons of this workshop were truly critical, appreciating the possibilities of a craft which in this region was continually receiving new ideas. This Saint-panel was purchased for us by the Laidlaw Foundation and other generous friends of the Museum.[3]

The English panel (Fig. 2) is the product of a different environment. Although it was produced about 1400, and is certainly later in date than the first, it clings to an older tradition to please a more conservative clientele. A good example of a Donor panel, this window came to the Museum without any identification, as part of the Gerald Larkin Bequest. It is a vertical rectangle 42 × 36 cm. and consists of fifty pieces of glass set in the usual lead framework. It shows a man with short hair and a rather Chaucerian face, wearing a red surcoat and kneeling on a tile floor against a grisaille background with an ornament of stylized plants in yellow. The border, 6.5 cm. in width, is made up of yellow diamond shapes on floral rectangles, the corners being dark green. The colours are red, blue, green, dark and bright yellow, silver-grisaille and violet. Four pieces in the border are undoubtedly modern replacements, but a violet piece on the man's sleeve and nine pieces in the border from their decoration appear to be earlier than the nucleus of the panel, and date from perhaps 1300–1360.

The kneeling man is a donor—perhaps of the window itself or of a sum of money for its church. Most of the window is a mosaic of coloured glass. Among the few painted details, the most conspicuous are the hands, the face and the folds of the

man's robe. The features, painted in direct-flesh technique,[4] have been drawn on a grisaille ground with almost no attempt at shading or portraiture. The hair has been formed by painting the area with black pigment and scratching a wooden stick through it, a technique in use about 1400.[5] However, individual pieces of glass elsewhere in the window show a combination of golden-yellow and silver-grey, a first step toward a more advanced technique.

Comparable examples are in the Victoria and Albert Museum, and interested readers can find them illustrated in Lewis F. Day's *Stained Glass*[6] and in Maurice Drake's *History of English Glass Painting*.[7] They suggest an English origin for our panel with a date between 1400 and 1440. Both authors call these panels "quarry lights," a term applied to windows with large areas of grisaille squares, whose purpose is to let as much light as possible into the church. The word derives from the French *carrée* (squarish), and was brought across the Channel by the French builders who worked in England from the twelfth century.

Fig. 4 *St. Leodegard.*
Swiss, about 1500. Acc. 960.166

Fig. 5 *Heraldic window.*
Swiss, about 1500. Acc. 964.22

Certain features, such as the wide border and the large proportions of the kneeling figure, suggest that ours was once a panel of much larger proportions, perhaps 125–200 × 60 cm. This conclusion is strengthened by the knowledge that windows in English parish churches about 1400 were larger than they had been hitherto. The fact that nearly all the damage and replacements occur in the border tends to confirm this.

Stained glass has always been precious, and it need cause no surprise that ten pieces are earlier than the nucleus of the window. Workmen would naturally pick up cast-off pieces if they could and, if an old church had to be altered or enlarged, some windows might have been eliminated and the glass used in a new location, perhaps in a smaller window. As a result the panel would be reduced in size. Since no evidence is available, it is equally possible that our window was cut down in size by a former owner, or even by a dealer who thought a smaller window would be easier to sell.

However, even with its changed proportions, this panel is an important example of fine craftsmanship. Whether it should be called a Donor panel or a fragment of a quarry light containing the portrait of a donor is open to discussion.

It is important to note the difference in shape not only of individual panels, but also of entire windows. In stylistic development the craft of making stained glass windows was subordinate to architecture. Windows gradually changed in size and became increasingly elaborate. A roundel (Fig. 3) from the topmost part of a tracery—the architectural framework in which a window is held—is not a usual shape for a panel. It was bought from a New York dealer in 1958 as a South German window of about 1490–1500. It consists of thirty-one pieces of glass in the usual lead framework,

with a diameter of 30.4 cm. It is intact and, except for a crack and a few soldering marks, is in its original condition.

The panel depicts God the Father whose right hand is raised in benediction, while the left hand holds an orb surmounted by a cross of late Gothic style. He wears a mauve cope over a green dalmatic and a type of crown common about 1500 or slightly earlier. He is surrounded by a golden nimbus and sits on a light blue cloud with a silver-white halo about his head. On his right shoulder is the Holy Ghost in the form of a dove. A much-curved scroll with a white front and a reverse side of gold bears an inscription in two different styles of black lettering. The inscription reads HOMINUM FILIIS PARS ERIT ALTARII IN ETERNO; both the letters and the abbreviations are a kind used about 1450–1550. The use of two different kinds of lettering is explained if the words are re-arranged, thereby reproducing the original text of Leviticus X, 13, "FILIIS HOMINUM ERIT PARS ALTARII IN ETERNO."[8] This inscription, referring to God the Son, taken with the picture of the Father and the Holy Ghost, suggests that the roundel formed the upper part of a window depicting the Trinity.

Both pot-melted and baked-on colours are used, as well as grisaille, with finished-flesh technique for face and hands. Details are indicated by the use of black pigment. The roundel possibly originated in Augsburg, South Germany, 1490–1510.

These first three panels are examples from the Gothic period. Figures 4 and 5 illustrate a greatly advanced technique and show designs of the early Renaissance.

The Swiss panel portraying Saint Leodegard, also known as St. Leger (Fig. 4), is a vertical rectangle 35 × 20 cm. consisting of 45 pieces of glass in a lead framework. It was given to the Museum by Miss Jessie Staunton in memory of her parents. It shows a bishop with a halo, holding a crozier and an auger or *tarière* in his right hand and offering a crown with his left. At the foot are two heraldic shields and at each side is a column with stiff leaves on the capitals. These support a pointed arch of branches and leaves with leaves also filling the spandrels. The pot-melted colours are red and blue, the baked-on colours violet, black, gold and white.

The crozier and auger identify the bishop as Loedegard, an historical Merovingian figure who was made patron saint of Lucerne. In his boyhood a page at the Merovingian court, he later became a member of the Council. He proclaimed and crowned first Childeric II (A.D. 653–675) and later Theodoric II, his successor,[9] and for this reason is shown offering a crown. A victim of political intrigue, he was blinded with an auger and died a martyr. The blue and white shield on the left is the coat-of-arms of Lucerne, the other the arms of the Holy Roman Empire. The two are shown together here because Lucerne was then a City State within the Empire and Saint Leodegard was its patron saint.

The columns, with arch and capitals decorated in a late Gothic manner, and the decoration of the two shields suggest a date prior to 1520. The Renaissance style of finished-flesh technique with which the face is painted indicates that the panel is probably not earlier than about 1470. Dr. Michael Stettner, formely Director of the Berner Historisches Museum, has identified this panel as the work of Hans Funk of Friburg, which would confirm the dating. He suggests that it may have been a gift from the congregation of Saint Leodegard to a small church.

Another Swiss example is a heraldic panel (Fig. 5), a vertical rectangle 45 × 31.3 cm., consisting of 59 pieces of glass in the usual lead framework. On the left is a Supporter (or Bearer), a young woman dressed in elegant courtly fashion. On the right is the crest, which consists of a shield divided into four fields, the upper left and lower right having three silver rings on a red ground, while the upper right and lower left have four squares alternately black and gold, with Holbeinesque scrolls. The shield is surmounted by a helmet flanked by red and white scrollwork. The *Helmkleinod* (helmet adornment) is a cushion-shaped *tortil*, or baronet's coronet, above which is a black wing with silver feathers against a violet background perhaps meant to represent velvet. At either side is a flat pilaster with capital and base and a low arch between; in the spandrels is a cusped branch and leaf work. The left spandrel has a Gothic page carrying a wooden beam, the right has another page reaching into a lion's mouth.

The colours are yellow-gold with grisaille, black pigment, blue, red violet and silver-grey grisaille. Several techniques were used: some of the colours were pot-melted, some baked-on. Especially inter-

esting is the fact that for the first and third quarters of the shield, pot-melted red glass was laminated onto a sheet of grisaille, showing three silver rings on a red field. The removal of the red glass in the ring areas reveals the silver-grey beneath.

This panel has a two-fold significance. First, there is the rare and difficult technique of laminating two layers of glass in order to obtain two colours on one piece. This process, dating back to the thirteenth century, was so complicated that it was rarely used. The second importance lies in the fact that this is a heraldic panel in the full sense of the word. Heraldic panels were made in the earliest days of stained glass and examples of the early Gothic period still exist. They are charming ornaments, though quite archaic. Their initial purpose was a pious and ecclesiastical one which indicated the family of a donor simply by means of a crest. The later type differ both in meaning and execution. The Reformation deprived the craft of the Church as a sponsor, leaving patronage to the aristocrat and the wealthy burgher. Our panel was intended for a secular building, perhaps a town hall.

The crest belongs to the Hohen-Landenberg, a powerful family widely dispersed in the region of St. Gall as early as 1209. This coat-of-arms appears for the first time in 1496. A few details in the window itself may help to confirm its date. The woman's dress resembles costumes on pre-Burgundian stained glass and wood carvings of southwest Germany and certain areas of Switzerland, suggesting a date about 1450–1520. Three pieces of glass are modern replacements, but these faithfully follow the original design. The panel has a distant resemblance to the work of Lucas Zeiner.[10] Since it cannot antedate the earliest use of the coat-of-arms in 1496, we may date it about 1500.

The Saint Leodegard and the heraldic panel still show considerable Gothic details, but belong to the Renaissance in date and technique. Inevitably one asks whether they should be classified as "Transitional." But the Gothic tradition persisted longer in Central and Northern Europe, and perhaps in these two instances advanced techniques alone should not exclude a Gothic classification. The difference between these and a mature Renaissance example can be seen from the following panel, which is about 25 years later in date.

The narrative panel depicting the death of Saint Nicholas (Fig. 6) was purchased in 1958 as South German, circa 1510–30. It is a vertical rectangle 65.8 × 47 cm. The coat-of-arms on the trestle stool in the foreground appears in a deed of 1370 in the Archives of the Grand Duchy of Luxembourg, whereby Godenard Roeser, Squire, sold for 210 florins to Geoffrey of Sassenheim (between Haarlem and Leyden) his tythes of Roeser (five miles south of the city of Luxembourg), Peppingen, Berchem, Crauthem and Burginen, all in the Duchy.

Fig. 6 The Death of St. Nicholas
probably from a window containing a number of scenes from his life.
South German, about 1530. Acc. 958.119.1

The presence of the crest and the initials N.R. suggest that a member of the Roeser family must be connected with the window.

In Germany the trestle stool went out of use after the first half of the fifteenth century, but continued to be fashionable in Holland and Flanders until the seventeenth century. This seems to indicate that our panel was designed by a Netherlands artist.

The finished-flesh technique of the faces and the hair drawn with fine lines both indicate a late date. The spandrel ornament, a rosette between cusps, points to the early years of the sixteenth century. The rosette came into fashion in Italy about 1300 and was then introduced into France. An early French example is found on the west front of the Carmelite Church in Nantes completed in 1502. From France it made its way to northern Europe. The cusped ornament was a late Gothic survival which disappeared after 1520.

A search for comparable material has brought to light four windows, each measuring 69.8 × 47 cm., with a recognizable style of decoration and a two-line inscription at the bottom. (Our panel is 4 cm. shorter, and perhaps has lost a similar inscription.) The four are (a) "The Birth of Saint Nicholas," Flemish, ascribed to Jacob Cornelisz, in the Victoria and Albert Museum;[11] (b) "Saint Nicholas Saving Three Youths from an Unjust Execution," wrongly identified as Alsatian or German, in the Burrell Collection in Glasgow (unpublished); also unpublished, in the Metropolitan Museum, (c) "The Consecration of Saint Nicholas as Bishop of Myra," and (d) "Saint Nicholas saving his City from a Famine." They are somewhat vaguely identified as South German or Flemish. In such details as the two columns, the low arch and the use of a rosette design with cusps, our panel closely resembles them and may belong to the same series or even to the same window. While the rosette and cusps are found somewhere on all five, they do not appear in the same places; only on our own and the "Saint Nicholas Saving his City from a Famine" are their positions identical. There is said to be yet another panel, similar in type and style, in the Metropolitan Museum storage. This represents Saint Nicholas secretly providing a dowry for three poor maidens, the basis of our Santa Claus story.

The design of some, if not all, of the Saint Nicholas panels, both in type and layout, may be compared with paintings by or from the workshop of Jacob Cornelisz of Haarlem, 1470–1535, although frequently the layout of the paintings is reversed. A roundel in the Rijksmuseum in Amsterdam[12] is a direct copy of a woodcut by Cornelisz in Berlin, and the only stained glass whose design can be definitely ascribed to him. One panel in this group, "The Birth of Saint Nicholas," has been ascribed by Kurt Steinbart to Cornelisz, and it does show the lack of overcrowding so evident in his work. The rest of the group, including our own panel, are better ascribed to the workshop of Cornelisz. Two pupils in his workshop, Dirk Jacobson and Cornelisz Bousz, occasionally used his designs and sometimes his signature. The design in our panel may perhaps be the work of one of these men.

Between this panel and the next (not illustrated here) there is a lapse of about one hundred years, but much more than time separates the two. Not only technique and style, but the very purpose for which stained glass was made underwent a drastic change.

What we have is a secular panel.[13] Other terms are applicable—"Donor panel", "Narrative panel" "Armorial panel"—but it is the type known by the untranslatable German term *Kabinettscheibe*, intended to be mounted at eye level in a government building to commemorate a donor. After the Reformation this type of panel was often presented to a diet chamber or a town hall, and was also used in private houses. The Church had long ceased to be the only sponsor of the craft, and the biblical topic is incidental. The choice of the story of Jacob's Dream is a pointed reference to the first name of one of the two people commemorated, Herr Jacob Herner of Büell and his wife Barbell Spiesin. Although the panel's charm lies chiefly in the naïve treatment of the Bible story, several technical details interest the connoisseur. It combines a number of techniques which had only recently been developed. While it is made in the traditional manner, with a number of small pieces of glass set in a lead framework, it is evident that a single large sheet could have served the same purpose, since more than one colour has been baked on almost all the pieces, some of which are also laminated. Thus the panel is in fact a painting on a transparent ground.

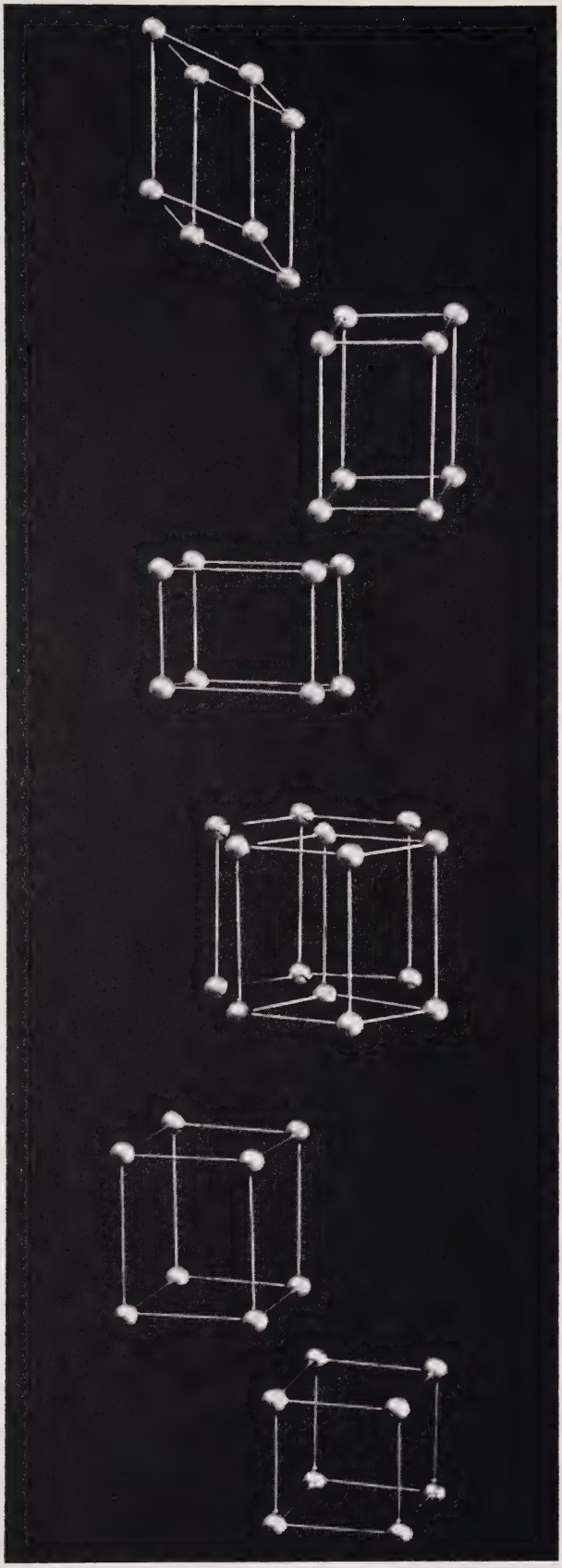
This is a vertical rectangle 35 × 23 cm., con-

taining 46 pieces of glass. In the centre is Jacob's Dream, with four angels ascending and descending the ladder. A baroque column stands at either side, and at the top is an inscription in Middle-High-German "*Ein Leitter Lang am himmel ston / die engel off und ab droff gon / Sach jacob schlaffend offem stein / im vill ziwsag im gott erschein*". An inscription at the bottom reads "*Jacob Herner / off dem buell / und Barbell / Spiesin Sin E : B / 1636 AW*." At the left is an angel holding an armorial shield with a gold fleur-de-lys on a blue ground, and at the right an angel holding a shield with two crossed spears on a gold ground. As the long and elaborate text proves, the panel was intended to be viewed by an educated public, not by the illiterate congregation of a medieval church. This panel was formerly in the collection of Captain Douglas Williams.

Though the number of stained glass windows in the Museum is still very small, through this small but valuable group we can trace the development of styles and techniques. No other art has more effectively captured the Gothic spirit, and in its later manifestations has shown more clearly how much the Renaissance owes to Gothic ornament.

NOTES

1. *Lewis F. Day,* Stained Glass *(London, Victoria and Albert Museum, 1913) fig. 60.*
2. Ibid., *fig. 61.*
3. *A full description of the Austrian panel of Saint Catherine appeared in* Varsity Graduate, *Christmas 1965.*
4. *Lewis F. Day,* op. cit., *fig. 60.*
5. Ibid., *fig. 60.*
6. Ibid., *p. 38, fig. 23.*
7. *Maurice Drake,* History of English Glass Painting *(London, 1912) p. 74, Plate XIV, fig. 6.*
8. *I am indebted to the Rev. M. M. Sheehan, S.C.B. of the Pontifical Institute of Mediaeval Studies for this rearrangement.*
9. Kunstdenkmaler Stadt Lucerne *vol. I, pp. 91–92.*
10. *Cp. Michael Stettner,* Old Stained Glass in Switzerland *(Zurich, 1953) Plate 19.*
11. Marburger Jahrbuch für Kunstwissenschaft, *vol. 5, 1929, p. 234, fig. 42.*
12. Ibid., *fig. 39. This window is copied from a woodcut signed by Cornelisz, and shown* ibid., *fig. 41, p. 233.*
13. *964.241.1.*



Construction showing six of the basic 14 unit structures of crystals

Building the ROM mineral collection

By Dr. J. A. Mandarino, Curator of Mineralogy

Although the Royal Ontario Museum's mineralogy collection ranks with the world's finest, for years the public displays consisted of traditional rows of glass cases.

Then, just over four years ago, the International Nickel Company of Canada, Limited gave a grant to build a modern gallery that would provide a suitable setting for fine mineral specimens. The result, the reconstructed Gallery of Mineralogy, was officially opened by Governor General Roland Michener on November 13. Created by Museum staff, the gallery is an exciting environment of curving walls, special lighting effects and display areas that look like jewel boxes for minerals. But much more than a display area, the gallery is an educational experience that invites visitors to participate in learning something of the science of mineralogy.

By pushing buttons, operating microscopes, a geiger counter and other special equipment, the

visitor may perform simple experiments that help to explain the chemistry, crystallography, physical, optical and other properties of minerals.

As the visitor strolls through the new gallery, examining the many rare and attractive specimens, he may wonder how such an outstanding collection is assembled.

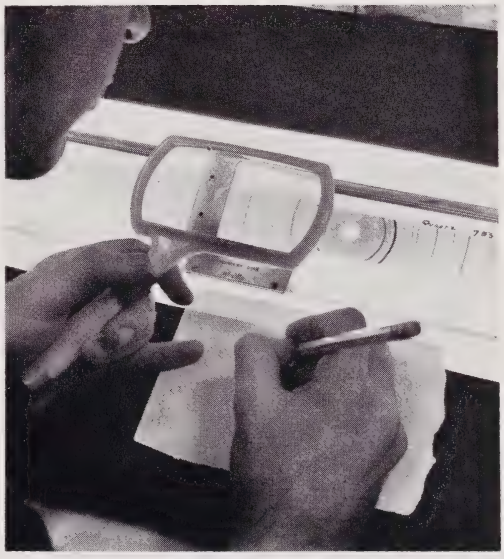
When I came to the ROM eight years ago, I thought it must be easy to build the collection: just buy more specimens.

This, of course, is what we *do* do, but money must be obtained and a "Want-List" prepared before the actual search can begin.

Oddly enough, we have no annual appropriation to buy specimens. We first collect minerals; sell them to dealers; and, with the proceeds, buy the minerals we need for the collection. This curious fiscal set-up has made us, quite by accident and with some reluctance, probably the largest wholesale mineral dealer in the world.

Before we buy a specimen, we must first decide: what *is* a valid species? A rose by any other name may smell as sweet, but a mineral by any other name is anathema to curatorial cataloguers. There are some 2,000 valid mineral names in the mineral kingdom. But there are also, in the mineralogical literatures, some 12,000 improper names! These are really synonyms, varieties of valid species, and names of discredited species. Sorting them out is a tedious process.

For example, "blende" is a synonym for sphalerite. "Blende" has been widely used right up until the present. But the International Commission on New Mineral Names ruled it out a few years ago, and the curator must adjust his files accordingly.



Quartz crystals found at Lyndhurst, Ont., one of many fine specimens in the new Gallery

Assistant Curator R. I. Gait studies an X-ray powder pattern, one of techniques used in identifying minerals

A variety is a close cousin to a valid species and doesn't warrant a special name. "Freibergite" and "schwatzite" are varieties of tetrahedrite. If a curator had five different cards in his file for blende, sphalerite, freibergite, schwatzite and tetrahendrite, he might think he had five different minerals when he really had only two.

Minerals are discredited with surprising frequency. This was understandable in the early days when the mineralogists' tools were extremely primitive. They could not be blamed, for example, for mistaking pyrolusite for a new mineral when their specimen looked altogether different from the description of the original specimen, even to having different crystal shapes. The supposedly new mineral was called "polianite," and any specimen of "polianite" in the collection must be renamed "pyrolusite."

With the modern X-ray machine, the error would never have been made. The X-ray machine, like a chest X-ray, penetrates the outer surface of an object to reveal how the inner structure is arranged. With a series of curved lines it "fingerprints" the mineral. All X-ray patterns of pyrolusite, including the so-called "polianite," look exactly alike.

X-ray patterns of two truly different minerals never look alike. Never? Well hardly ever. Sometimes two different atoms occupy the same position in the geometric arrangement of the structure. For example, fluorite and uraninite give essentially the same X-ray pattern. But where fluorite has an atom of calcium, uraninite has an atom of uranium.

Since 1960, scientists have taken steps to avoid any further publication of "new" species which one day may be discredited. Every new mineral submitted for publication in a reputable mineralogy journal must first be accepted by the international commission of new mineral names. If it can pass the eagle-eyed scrutiny of the commission, it's probably a valid new species.

There are two authoritative books on mineralogical nomenclature, *An Index of Mineral Species*, by Dr. Max Hey, and Dr. Hugo Strunz's *Mineralogishe Tabellen*. Using these works as a guide (even they don't always agree), we painstakingly drew up a list of 2,000 valid mineral names.

Then we compared the list with the ROM's files, weeding out all the synonyms, the variety names, and the names of discredited species. When we were finished, we had 1,400 names, or a very respectable 70 per cent of all the valid species. Now we were able to compile a "Want-List" of the coveted missing 600 minerals.

Once we knew what we had, and what we needed, and had some money, we were ready to acquire specimens. This is the most challenging phase of building a mineral collection because the specimens we lacked were often almost impossible to find.

There are certain tried and true avenues of approach to the problem. Our main source of material used to come from the mineral dealers, through their catalogues. Here, among such hardy perennials as calcite, barite and quartz we searched for the rarities: new minerals, minerals new to us, old minerals from localities new to us, and minerals of display quality. Some months we found nothing of interest; other months, perhaps a solitary specimen. Our largest single coup occurred in the spring of 1965 when the catalogue of Ward's Natural Science Establishment (the world's largest mineral supply house) listed an extraordinary shipment of Russian material. We quickly phoned them, and were promised 13 specimens, nine of them brand new minerals!

Lately, mineral dealers have not been advertising as much—perhaps they found it dosen't pay. But we can still count on a few visits from dealers. One dealer from Milwaukee returns to us faithfully each spring, like the swallows to Capistrano. When he first appeared, during the gallery renovations, one of the staff artists nicknamed him, "Dirty Dan, the Mineral Man," and the name has stuck.

Dealing with Dirty Dan is very much like participating in an old Yankee horse trade. Neither side is satisfied until the price has been haggled over. He will show me his case of wares, each mineral bedded on cotton in empty corset boxes (they happen to fit easily into the trunk of his car).

I'll spot, for example, an especially fine brookite. "How much for that miserable brookite?" I sneer. (It is five times larger than our best brookite, with perfect crystal faces.)

Dan pats me on the back. "Well seeing as it's you, and a friend, I'll give it to you for twenty-five."

"Twenty-five! Twenty-five *dollars*? Robbery! I can't give you twenty-five for that; look—look there. See that chip?"

Dirty Dan looks grieved. "Okay," he says reproachfully, "but the boys in Ottawa will give me twenty-five. You'll be sorry."

"Why we couldn't even *display* that crummy

specimen; we'd just buy it for reference material, and keep it hidden in the drawer."

"I know three places I can sell that for twenty-five dollars between here and Ottawa. You're just lucky Dirty Dan comes to you first as a personal favour."

"When you come back from Ottawa, you'll still have it; I'll give you thirteen dollars for it now."

"Thirteen dollars! You're killing me!" He chews his lip. "Tell you what. I'm gonna do you a big favour. I'll throw in the two little brookites."

"For thirteen?"

"Are you crazy! Twenty-five!"

"Twenty?"

"Twenty-five."

"Twenty."

He sighs. "Oh, all *right*! But you're making a poor man of me."

I am unmoved. He has already confided to me over a drink the previous evening that business was never better.

However, perhaps the most valuable source of material today is through exchange. Most of the large museums in North America and Europe have standing exchanges with each other. No money changes hands and no time-limit is imposed. Whenever a museum finds itself with some especially good duplicates, it sends them out; the unwritten rule is to return duplicates of equal value as soon as possible. (It may take years. Museums have never been noted for their speed records.) We have such exchanges with the Russian Museum, the British Museum, the Smithsonian, Harvard and the French Museum among others.

The Russians have provided some of the finest exchanges, mainly because their government conducts extensive explorations into virgin territory deep inside the Soviet Union.

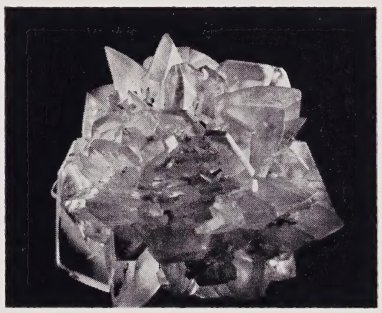
Other sources of acquisition are often unexpected but, perhaps for that reason, especially exciting. Some of the pleasantest memories in a curator's life concern unplanned acquisitions, otherwise known as gifts. Most large museum collections owe their prominence to gifts from some wealthy philanthropists who bequeath entire collections to them.

The ROM is fortunate in having the Dorfman Collection, the gift of the late André Dorfman of Toronto. This collection contains about 1,000 specimens, and represented the greatest single gift to the ROM's Mineralogy department until the INCO grant for the new gallery.

Our staunchest "angel" today is a prominent mining consultant in Toronto who travels on assignment all over the world. His visits include Great Slave Lake, Mexico, Labrador, Hawaii, Ireland, Chibougamou, Germany and the British Isles. At each site he collects two specimens of everything—one for his collection and one for the Museum.

Some acquisitions are discovered right here in Canada, in the field or in the laboratory. In 1965 two amateur collectors from Kingston, Ont., came in with several cardboard cartons crammed with allanite specimens they found near their home. Allanite usually appears in masses that look like tar. It rarely assumes crystal form and, when it does, the crystals are seldom more than half an inch long. The old gallery was being torn up at the time of their visit, and I remember standing amid the debris, watching these two collectors as they started to spread out their specimens on the glass top of one of the old display cases. Imagine my astonishment when they unwrapped crystal after crystal of allanite, some of them six inches in length! I remember thinking, "This is probably the greatest collection of allanite specimens ever gathered in one place in the whole world."

Probably the most satisfying way to build the ROM's mineral collection is by discovering minerals



Cerussite crystals from Arizona are in the Mineralogy Research Collection

Gypsum crystals, displayed in the new Gallery, are from the Winnipeg area

one's self. The first place to look for new specimens is, surprisingly, right in the existing collection. Minerals, like people, tend to hang out with the same crowd. If two or three are found closely associated in one rock, they are apt to be found together in another rock.

In 1965 we read that two Frenchmen, Herpin and Pierrot, had discovered two new minerals from France: weilite and sainfeldite. They were found in association with pharmacolite. Dr. Donald Harris, the former assistant curator of mineralogy, studied all our specimens of pharmacolite under the microscope. Sure enough, on one specimen he found the two new minerals, weilite and sainfeldite, making the pharmacolite specimen much more valuable than originally imagined.

Other new discoveries turn up in the laboratory. Some years ago we arranged to identify unknown specimens for Mr. Scott J. Williams, a mineral dealer in Arizona. He would give us the specimens in exchange for our services. This might not seem like a bargain but Mr. Williams is an extraordinarily observant dealer; he had already turned up four new minerals in the past and any mineral he could not recognize probably would be very rare. His first shipment contained fairly routine minerals; his second, a package of nondescript-looking rocks from Moctezuma, Mexico. But under the microscope these revealed some unusual specks. Looking at them, I felt the hairs at the back of my neck prickle, a completely unscientific, but quite reliable sign of something rare. In this and subsequent material, six new minerals turned up from a single mine in Moctezuma.

Sometimes we find new minerals in the field. Three years ago a remarkable locality was rediscovered in a quarry near Mont St. Hilaire, 20 miles from Montreal. The quarry had been reopened to provide gravel for new roads to Expo, and it has proved a boon to mineralogists. Professionals from Ottawa, Montreal and Toronto have been collecting there regularly. So far, in three short years, about 100 different species have been recorded from the quarry. Twenty-six of these are quite rare and 12 are unknown species which, after further study, may prove new. All this from a few hundred square feet of ground! Some day Mont St. Hilaire will rank with the classic mineral localities of the world, one of a special group of areas where the natural forces of heat and pressure have worked on the chemical elements present in the rocks millions of years ago to produce an extraordinary profusion of minerals. It should become as well-known as Crestmore, California; Franklin, New Jersey; Langban, Sweden; and the Lovozero Massif in the Soviet Union.

The ROM's mineral collection now contains about 75 per cent of all known minerals. But about 30 new minerals are discovered every year. Even if we could find the minerals to complete the collection today, we would be behind tomorrow. It's a fascinating race, nevertheless. Any day we may discover a specimen new to us—leafing through a dealer's latest catalogue, or in the mails, in an exchange from another museum, or unloaded from the packsack of an amateur collector, or in someone's private collection, or as a gift, or out in the field under one's feet, or in the lab under the microscope.

This painstakingly acquired mineral collection at the Museum serves the varied needs of both amateurs and professionals, from the casual visitor to the enthusiastic collector; from the prospector to the dedicated research scientist.

For example, uranium prospectors can come to study the Museum's suites of uranium minerals, uranothorite, uraninite, uranophane, carnotite and tyuyamunite and many others. Both idle visitor and amateur enthusiast can study the 1,200 choice specimens in the systematic collection which lines the entire south and west walls of the ROM's Mineral Gallery. Here they can see what constitutes a fine specimen, and a fine collection, and so develop their appreciation for minerals.

Professional mineralogists are also accommodated. Last year the mineralogy department filled many requests for material from scientists from Ottawa to Dresden, from Pennsylvania to Siberia.

At last a proper setting is available to display the collection, thanks to the beautiful design of the artist, Mr. John B. Hillen and his associate, Miss Frances Brittain.

In addition, we now have a separate room where the bulk of the Museum's 150,000 specimens are arranged according to Dana's system of mineralogy. This research collection should attract professionals from universities and industry to study and compare minerals from all over the world.

With the public able to see the beautiful specimens, and the professional able to study the research specimens, the Mineral Gallery has enhanced the value of the ROM's collection immeasurably.

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